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Protracted walking problems among hip surgery patients

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People who have undergone hip surgery with total hip arthroplasty often experience no difficulty in walking – but for some, mobility actually is impaired long after surgery. Research under way at Sahlgrenska Academy is focusing on how advanced motion analysis can lead to improvements for patients.

"We have to try to attain a gait that is as normal as possible, and in that case, how we measure it and follow up is important," says Roland Zügner, a Ph.D. student in the Department of Orthopaedics and a registered physiotherapist.

In work on his dissertation, he has evaluated various analytical methods used in the clinical gait analysis that records patients' patterns of movement. With the aid of measuring points on the skin, images of how a person walks are created.

"It is becoming more and more common for patients to be referred for a gait analysis before a decision is made for an operation or other measure," Roland Zügner says. "Then they return after a few years, and we can see what the outcome was as part of our quality assurance efforts."

In Sweden 17,000 hip surgeries are performed annually in which patients receive artificial hip prostheses, mostly as a result of arthrosis joint degeneration. Nine out of ten surgery patients are pleased with the results, despite the fact that analyses in the current research points to

continued mobility problems two years after surgery.

"What I have looked at is how they actually walk, and it turns out that they have difficulty in regaining a normal gait after getting a total hip prosthesis. They are often very pleased, because many have experienced severe pain and other problems before surgery. But their gait is not restored, and they cannot properly extend their hip," says Roland Zügner.

The causes are unclear, he notes, but one reason may be the difficulty of changing ingrained movement patterns developed prior to surgery. Another reason may be that the sensory systems in the hip sections are altered when the body's own tissue is replaced with the plastic and metal of the prostheses.

"The question that arises is why this is important when people are still satisfied. But we have to consider whether it's possible that the gait affects the longevity of the prosthesis. It might wear out and have to be replaced earlier because the distribution of forces on the hip joint, pelvis and femur will be different if the gait is not normal," Roland Zügner says.

"Purely from a rehabilitation standpoint, it might be good to put more emphasis on exercises that extend the hip, both before and after surgery, and it would be interesting to study the effects of a more targeted exercise program along these lines for this group."

More information: Gait and motion analysis of hip arthroplasty. Validity, reliability and longterm results. hdl.handle.net/2077/53611

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